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30 Colorado mines are leaking heavy metals into state rivers

Nobody tracks total discharge, likely equal to at least one Gold King disaster every two days — impairing rivers and streams

By Bruce Finley
The Denver Post

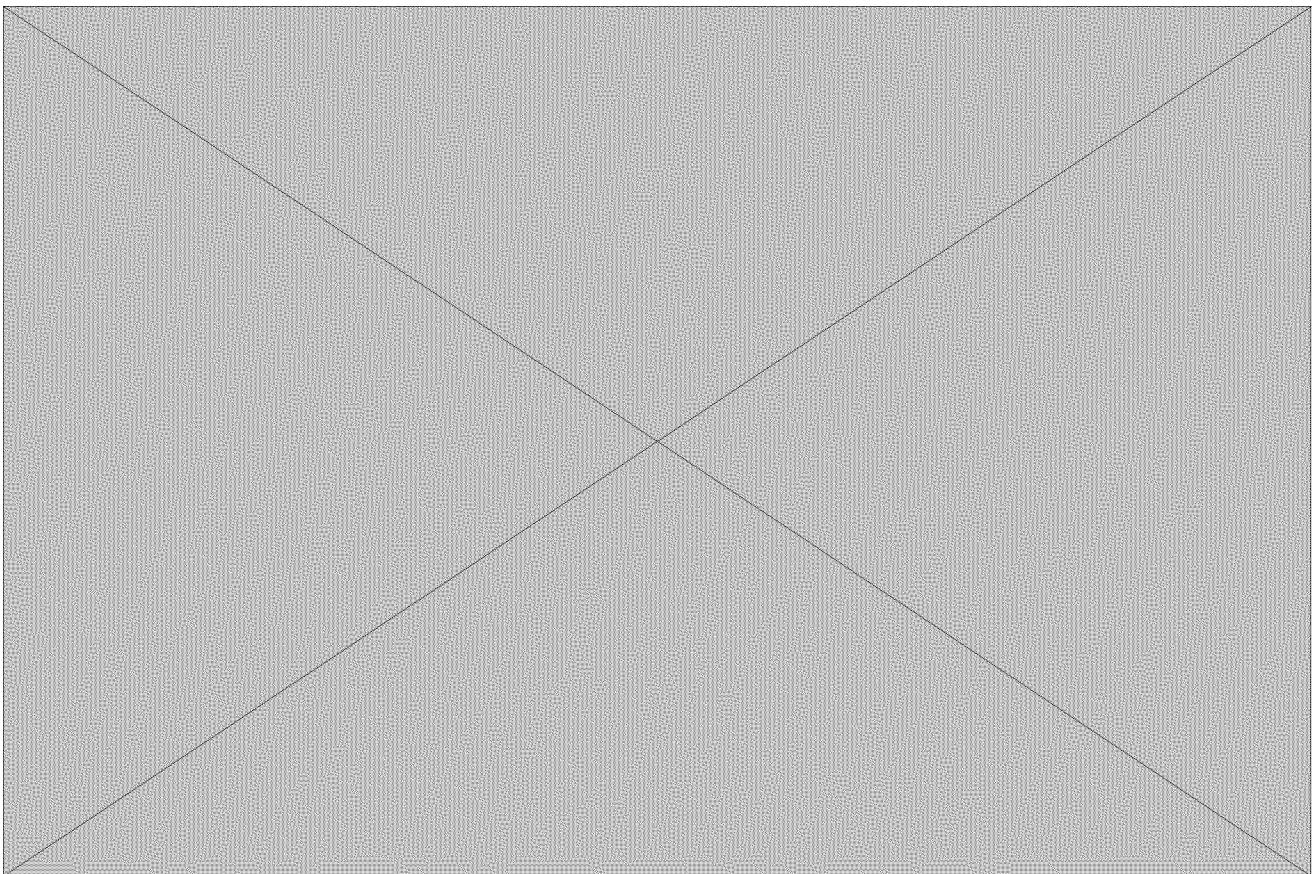
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The opening to the Kohler Mine that has been bulkheaded August 13, 2015 along the Red Mountain Pass. Although bulkheaded, the mine is still slowly leaking water that is making its way into the Animas River. The San Juan County and the city of Silverton have a rich mining history with hundreds of ...

After the 3 million gallon Gold King Mine blowout, Colorado officials began scrambling to create a map of a problem they've known about for years: 230 other old mines statewide leaking heavy metals-laced muck into headwaters of the nation's rivers.

These old mines have leaked so much for so long, thousands of gallons a minute, that state agencies don't track the combined toxic flow. But by the estimates at sites where the Environmental Protection Agency has stepped in, the overall discharge equals at least one Gold King disaster every two days — spreading cadmium, copper, lead, arsenic, manganese, zinc and other contaminants.



Bandera Mine wastewater flows into a creek that feeds the Animas River. State mining regulators often don't discover old mine discharges until health responders are called to test water after residents report bright colors or dead fish. (*Brent Lewis, The Denver Post*)

"We're not OK with any of this. We're not OK with contaminated water running into waterways," said Ginny Brannon, director of reclamation, mining and safety for the state.

"It is beyond our control. We inherited what we inherited. We took that, all those sites, and every year we steadily move forward with the goal of cleaning it up. We do as much as we can every year. We would love to do more. If we had the money."

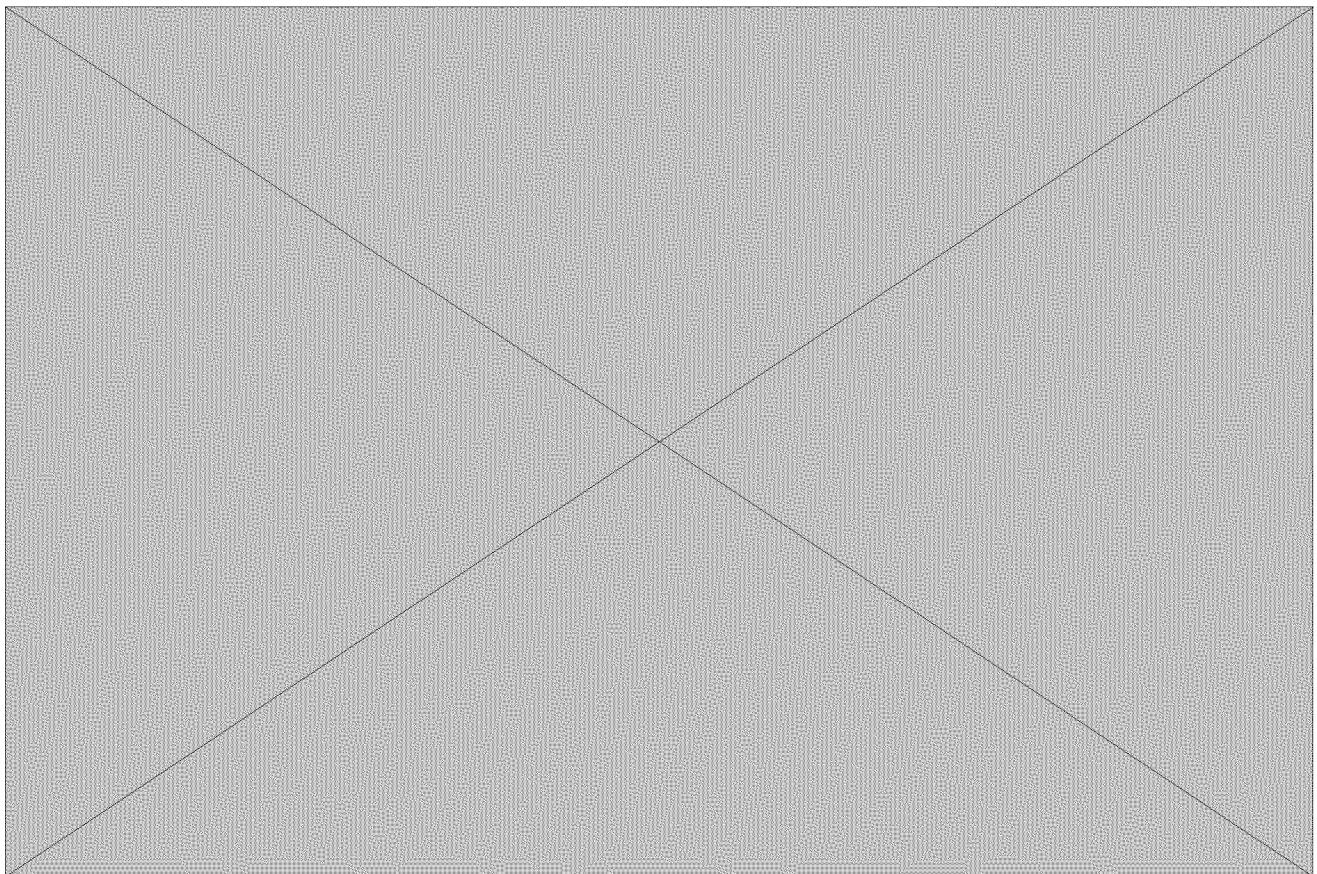
The EPA has calculated that 40 percent of river headwaters in the West are impaired by acid mine drainage. In Colorado, state health officials Thursday determined that discharges from the 230 old mines have contaminated 1,645 miles of rivers and streams.

But there is no state or federal program for systematically inspecting those mines, tucked away in high mountains, the hangover from mining booms and busts that made Colorado a state.

Colorado mining regulators say that's because culprits at most sites have vanished.

The waterways contaminated by old mines — concentrated around historic mining hubs Silverton, Leadville, Lake City, Salida, Montezuma, Central City and Ouray — include segments of the Arkansas, Animas, Eagle, Big Thompson, Gunnison, South Platte and Uncompahgre rivers.

First impacts of water contaminated with heavy metals generally show up as dead fish or aquatic life, with drinking water supplies threatened. Later damage, depending on exposure, include human health harm and higher costs of cleaning up water at municipal treatment plants. Fully restoring poisoned fisheries after past disasters in Colorado has taken decades.



A structure remains from the Bandera Mine operations in San Juan County. Many such abandoned mines in Colorado were not properly bulkheaded, which opens the possibility of wastewater draining into the rivers and creeks below. (*Brent Lewis, The Denver Post*)

State mining regulators often don't discover the old mine discharges until state health responders are called to test water after residents report bright colors or dead fish.

While state mining officials have visited all 230 sites, Bruce Stover, director of abandoned mine lands reclamation, emphasized limits on what Colorado can do to launch cleanups. Liability risks and weak laws are to blame, he said.

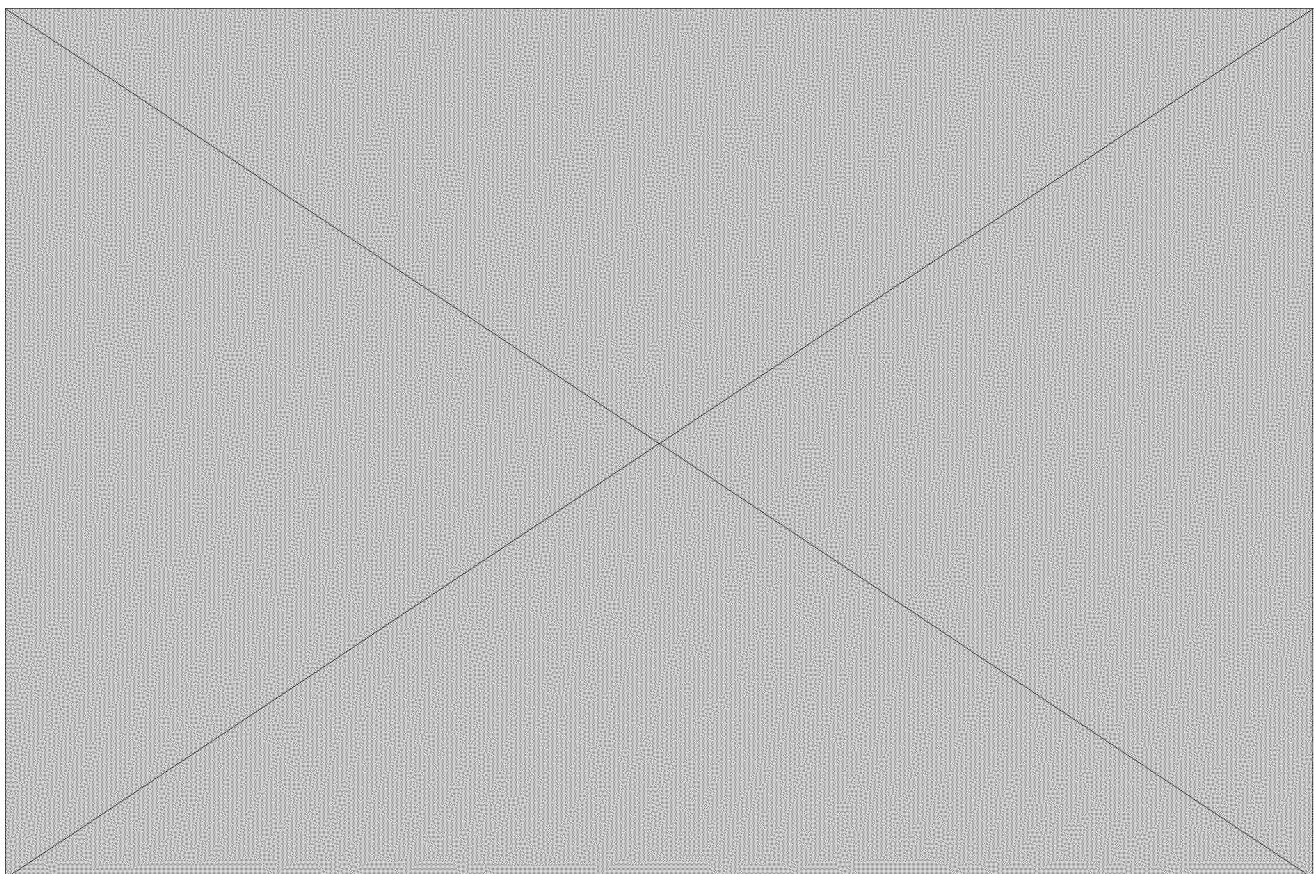
"These are inactive sites that do not have a permit. There are no inspections on them whatsoever. They are just out there in the woods," he said.

Short of EPA takeover for federally run cleanups, which include installation of continual water-treatment systems, state officials said the best Colorado can do is to try to move forward on a few cooperative projects each year.

They have to rely on funds funneled from outside federal and private sources. Unlike coal mining and extraction of oil and gas, hard-rocking mining in the West, under the 1872 mining law that still governs, companies are not required to pay royalties or other fees that could help deal with festering abandoned mines.

Last year, state mining officials spent \$1.5 million on six mine cleanup projects, which includes tailings removal, riverside restoration and plugging leaks, down from \$4.5 million in 2013 — reflecting what federal agencies, such as the Bureau of Land Management and the Forest Service, have been able to contribute.

State mining officials spent \$12.3 million on mine-reclamation work between 2009 and 2014.



Sally Zabriskie on Wednesday disturbs the bottom of the river to show that the Gold King waste has settled under the dirt of the Animas River.

Stover noted that most of the 230 old mines still leaking, while they cause harm, probably would not individually meet EPA criteria for launching a Superfund cleanup.

When Colorado has to go it alone, officials typically face legal and technical controversy. State mining engineers have favored installation of bulkhead plugs inside mines — a way to stop toxic discharge.

But that approach appears questionable after the Aug. 5 Gold King blowout, triggered by an EPA crew. Bulkheads backed up water inside Gold King and nearby mines, possibly priming them for blowouts.

Gold King owner Todd Hennis last week said the spread of backed-up water in the nearby Sunnyside Mine was a factor in the blowout.

EPA records on the adjacent Red and Bonita Mine show that state-backed installation of bulkheads in the Sunnyside Mine led to loaded-up wastewater in the Mogul, Red and Bonita, and Gold King mines, worsening contamination of Animas headwaters.

The Animas River Stakeholders Group is calling for installation of a water-treatment plant on Cement Creek, the hardest-hit Animas tributary — at an estimated cost of \$5 million to \$20 million, plus \$1.2 million a year to run the plant.

"The ultimate goal should be to change the 1872 mining law," said Bill Dvorak of the National Wildlife Federation. "It should be changed to say those who caused the problem should have to deal with it and not walk away from it and leave it to the taxpayer."

Colorado Mining Association president Stuart Sanderson said Colorado and federal agencies could benefit from industry expertise in cleaning up old mines.

"The industry is and has been willing to contribute more resources and expertise to clean up historic mines that are not subject to modern reclamation standards," Sanderson said. But first, he said, Congress must take action — to shield companies that get involved, he said.

"We need good Samaritan legislation and some assurance our liability is not unlimited."

Meanwhile, the discharge from the 230 mines continues.

Colorado officials blame a complex mix of factors for why this problem has festered for more than five decades.

They cite a general lack of political will, leading to poor funding. The entire \$8 million budget for Colorado's 65-employee mining division, which focuses mostly on active mining, is less than the amount needed for a single major cleanup.

At the federal level, a U.S. Geological Survey abandoned-mines program was canceled in 2008 amid budget cuts.

State officials also point to the difficulty of cleanup, which means mobilizing work teams at sites above timberline where rock, debris and collapsed timbers block tunnels.

And they lament a legal liability nightmare. Under federal law, anybody who embarks on mine cleanup and who, no matter how well-intentioned, makes the problem worse, can face federal prosecution for tens of millions of dollars for environmental damages.

Conservation groups such as the National Wildlife Federation and Trout Unlimited, despite significant funding from hunters and anglers, say this cripples their ability to get involved.

"We need some national policy change for groups like ours to be able to get out there and work on old mines," said Steve Krandall, Trout Unlimited's Durango-based director of conservation in the western United States. "There could be a much more robust public-private partnership around this issue."

Colorado does its best with limited resources, Krandall said.

"But this is such a large and pervasive issue. The EPA can only get to and remediate so many mines," he said. "The potential for this kind of accident certainly exists around the West. ... Why do we accept it?"

Former Sen. Mark Udall repeatedly pushed for good Samaritan laws in Congress. Those efforts failed.

Gov. John Hickenlooper said a blowout like the one at Gold King must never happen again. Colorado officials again are calling on Congress to act.

"We'd love to see a good Samaritan law that allows third parties to go in and help work on these sites without liability," Brannon said. "Maybe there's enough attention now that perhaps, finally, we can get that through Congress. If we had good Samaritan laws, we could do more good cleanups."

Below Gold King, as Cement Creek flows into the Animas, heavy-metal contamination got so bad that, a couple of years ago, the EPA conducted a test. Biologists were worried that birds eating aquatic insects could be exposed to high zinc, cadmium, lead, copper and manganese. Fish had long since died.

An EPA team collected water a mile down from where Cement Creek meets the Animas and, in a lab, dropped in a batch of young trout. They left them for 96 hours, according to an EPA document. All the fish died.

That helped spur the recent EPA intervention at Gold King and other mines near Silverton, leading to this month's spill.

Even late last week, with a 100-mile mustard-hued plume barely cleared, state and local officials largely agreed that a greater EPA role in the future is probably essential to deal with those 230 leaking mines.

"You're going to have some people say: 'Hey, the EPA, look at how incompetent they are.' But others will see this is part of a longer-term problem," said Peter Butler, a coordinator of the Animas stakeholders group and a former director of Colorado's Water Quality Control Commission. "Mistakes happened. We need to have this agency come in and provide more resources.

"There's just a shortage of state resources."

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A look at abandoned mines in Colorado

A look at the mine problem:

- 500,000 estimated abandon mines around the Western U.S.
- 23,000 estimated abandon mines in Colorado
- 9,000 of 23,000 state mines where state has done some work to reduce hazards
- 230 abandon mines where state officials know about significant toxic leaks into waterways

Sources: EPA, Colorado Department of Natural Resources

